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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,614	06/25/2003	Yukihiro Nakano	239459US0	2488

22850 7590 02/22/2007  
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/22/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/22/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

**Office Action Summary**

Application No.

10/602,614

Applicant(s)

NAKANO ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5,7,9,11,12 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3,5,15 and 18 is/are allowed.
- 6) ☒ Claim(s) 7,9,11,12,16,17 and 19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. All outstanding rejections are overcome by applicants' after-final amendment filed 1/23/07 which has been entered.

Upon updating the searches, a new reference came to the attention of the examiner, namely, Rosano et al. (U.S. 2003/0045627). The indicated allowability of claims 7, 9, 11-12, 16-17 is withdrawn in view of the new grounds of rejection set forth below utilizing Rosano et al.

It is noted that in light of the new grounds of rejection utilizing Rosano et al., the finality of the previous office action has been withdrawn and thus, the following action is non-final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7, 9, 11-12, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the polymerization initiator" in lines 7-8. There is insufficient antecedent basis for this limitation in the claim.

**Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 7, 9, 11, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Rosano et al. (U.S. 2003/0045627).

Rosano et al. disclose aqueous ink comprising aqueous dispersion of composite particles that comprise pigment and polymer wherein the polymer is obtained from 75-99.9% nonionic monomer, i.e. alkyl (meth)acrylate, corresponding to presently claimed monomer (C), 0.5-4% ionic monomer, i.e. salt-forming monomer, corresponding to presently claimed monomer (A), and 0.1-20% macromonomer. Given that the polymer is prepared from majority of hydrophobic monomer, i.e. alkyl (meth)acrylate, it is clear that the polymer is water-insoluble as presently claimed. It is further disclosed that the polymer is adsorbed to the pigment surface and that the surface of the pigment is completely covered with the polymer, i.e. composite particles comprise pigment-containing polymer. An oxidizing component and reducing component that is thioglycolic acid is present during polymerization (paragraphs 10, 11, 15, 16, 24, 28, 33, 41, 46, and 54). Although there is no explicit disclosure that the polymer of Rosano et al. has ionic group at its end, given that the polymer is prepared using thioglycolic acid identical to that presently claimed, it is clear that the polymer would inherently possess ionic group at its end. Further, although the thioglycolic acid is referred to as a reducing component and not a chain transfer agent as presently claimed, given that the polymer is prepared using thioglycolic acid as is the polymer of the present invention, it is clear that regardless of what the thioglycolic acid is

called, the use of such thioglycolic acid during polymer preparation would inherently result in polymer that has ionic group at its end.

In light of the above, it is clear that Rosano et al. anticipate the present claims.

**Claim Rejections - 35 USC § 103**

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosano et al. (U.S. 2003/0045627) in view of Nakano et al. (U.S. 2002/0016385).

The disclosure with respect to Rosano et al. in paragraph 5 above is incorporated here by reference.

The difference between Rosano et al. and the present claimed invention is the requirement in the claims that the polymer is further obtained from at least one monomer that is hydroxyl group-containing monomer or monomer of presently claimed formula (1).

Nakano et al., which is drawn to ink jet ink comprising pigment-containing water-insoluble polymer wherein the polymer is obtained from macromonomer, salt-forming monomer, and other copolymerizable monomer, disclose that the polymer is further obtained from hydroxyl group-containing monomer or monomer identical to that of presently claimed formula (1) in order to increase the jetting stability and print density of the ink (paragraphs 2, 36, 59, 74-75, 99, 100, and 104).

In light of the motivation for using pigment-containing polymer obtained from specific monomers disclosed by Nakano et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to utilize polymer further obtained from hydroxyl group-containing monomer and/or monomer of presently claimed formula (1) in Rosano et al. in order to produce ink with improved jetting stability and print density, and thereby arrive at the claimed invention.

**Allowable Subject Matter**

8. Claims 1-3, 5, 15, and 18 are allowable over the “closest” prior art Akers, Jr. et al. (U.S. 6,652,634) for the following reasons:

Akers, Jr. et al. disclose water-based ink comprising pigment contained in water-insoluble, i.e. prepared from monomers including hydrophobic monomers, graft copolymer dispersant wherein the graft copolymer is prepared using chain transfer agent such as 3-mercapto-1,2-propanediol. Given that the polymer is obtained using chain transfer agent such as 3-mercapto-1,2-propanediol, it is clear that the polymer would inherently have at least two hydroxyl groups at its end.

However, there is no disclosure or suggestion in Akers, Jr. et al. that the water-insoluble polymer is obtained by copolymer a monomer mixture comprising (A) salt-forming group-containing monomer, (B) macromer, and (c) monomer copolymerizable with monomer (A) and monomer (B) as now required in present claims 1-3, 5, 15, and 18.

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9. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

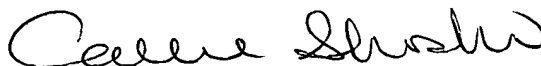
Claim 20 would be allowable if rewritten in independent form as described above given that there is no disclosure in the "closest" prior art Rosano et al. (U.S. 2003/0045627) of process for preparing the water-based ink as required in present claim 20.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
2/15/07